



Energy Efficiency & Air Quality



July 27, 2010

Why Consider Energy Efficiency?

- The less energy we use, the less we pay
 - Energy efficiency (E^2) can reduce the energy bill for many homeowners and businesses by 20 to 30 percent*
 - Utilities are facing more stringent regulatory requirements and growing electricity demand.
 - E^2 allows that demand to be met without building more generating units, the cost of which would be borne by consumers



Why Consider Energy Efficiency?

- The less energy we use, the less energy we need to generate at power plants
 - Reduced need to use “peaking” units to meet demand
 - Reduced need for new power plant construction



Why Consider Energy Efficiency?

- The less energy we need to generate at power plants, the less negative impact we have on our air quality
 - Roughly 98% of our area's electricity generation is fossil fuel derived
 - “Fuel Combustion - Electric Utility” is the largest source in Jefferson County of*
 - Fine particulates ($PM_{2.5}$)
 - Sulfur Dioxide (SO_2)
 - Oxides of Nitrogen (NO_x)

**How do emissions of air pollution
impact our community?**

National Ambient Air Quality Standards (NAAQS)

- US EPA sets national standards for common pollutants
 - Health-based standards
 - Reviewed periodically
- Consequences of nonattainment
 - Loss of economic development opportunities
 - Restrictive permitting requirements
 - Loss of federal highway and transit funding



NAAQS Attainment

July 2010 Status

Pollutant	Standard	Averaging Time	Attainment Status
Carbon Monoxide	9 ppm	8-hour	Attainment
	35 ppm	1-hour	Attainment
Lead	0.15 $\mu\text{g}/\text{m}^3$	Rolling 3-Mo Average	Attainment
	1.5 $\mu\text{g}/\text{m}^3$	Quarterly Average	Attainment
Nitrogen Dioxide	0.053 ppm	Annual Average	Attainment
	0.10 ppm	1-hour	Attainment
Particulate Matter (PM10)	150 $\mu\text{g}/\text{m}^3$	24-hour	Attainment
Particulate Matter (PM2.5)	15.0 $\mu\text{g}/\text{m}^3$	Annual Average	Nonattainment
	35 $\mu\text{g}/\text{m}^3$	24-hour	Attainment
Ozone	0.08 ppm	8-hour	Attainment
Sulfur Dioxide	0.03 ppm	Annual Average	Attainment
	0.14 ppm	24-hour	Attainment

NAAQS Revisions

	Lead	NOx	SO ₂	Ozone	PM	CO
Final	✓	✓	✓			
Proposed				✓		
Under Review					✓	✓

NAAQS Attainment

Anticipated Status

Pollutant	Standard	Averaging Time	Attainment Status
Carbon Monoxide	9 ppm	8-hour	Attainment
	35 ppm	1-hour	Attainment
Lead	0.15 $\mu\text{g}/\text{m}^3$	Rolling 3-Mo Average	Status Uncertain
	1.5 $\mu\text{g}/\text{m}^3$	Quarterly Average	Attainment
Nitrogen Dioxide	0.053 ppm	Annual Average	Attainment
	0.10 ppm	1-hour	Status Uncertain
Particulate Matter (PM10)	150 $\mu\text{g}/\text{m}^3$	24-hour	Attainment
Particulate Matter (PM2.5)	10.0 to 14.0 $\mu\text{g}/\text{m}^3$	Annual Average	Nonattainment
	25 to 35 $\mu\text{g}/\text{m}^3$	24-hour	Status Uncertain
Ozone	0.060 to 0.070 ppm	8-hour	Nonattainment
Sulfur Dioxide	0.075 ppm	1-hour	Nonattainment

Poised for Progress

- Our community has a history of success in meeting air quality challenges
- Strong knowledge base exists among stakeholders and residents
- Attainment will require changes by all
- The need for innovative solutions is urgent

To find out what
residential and commercial
energy efficiency programs
are available from LG&E,
visit their webpage at:

<http://www.lge-ku.com/ee>